

Date: Friday, 6/9/2006 11:32:27 AM
 User: Linda Lacelle

Process Sheet

| | | | | | |
|----------------------------------|---------------------------------------|-----------------|-------------------------|---------------------|-----------------|
| Customer | : CU-DAR001 Dart Helicopters Services | | Drawing Name | : X-TUBE MATERIAL | |
| Job Number | : 27471 | | Part Number | : D6017115 | |
| Estimate Number | : 12448 | | Drawing Number | : D6017 PRELIMINARY | |
| P.O. Number | : N/A | | Project Number | : N/A | |
| This Issue | : 6/9/2006 | S.O. No. | : N/A | | |
| Prsht Rev. | : NC | | Drawing Revision | : PREL | |
| First Issue | : N/A | | Material | : N/A | |
| Previous Run | : N/A | | Due Date | : 7/27/2006 | |
| Written By | | | Qty: | 66 | Um: Each |
| Checked & Approved By | | | | | |
| Comment | : Est Rev:A New Issue 06-06-09 JLM | | | | |

Additional Product

Job Number:



| Seq. #: | Machine Or Operation: | Description : |
|---|------------------------------|-----------------------|
| 1.0 | PG | PURCHASING |
| | | |
| Comment: PURCHASING Issue P/O: <u>1448</u> a) Description: 4130 Seamless Steel Tube b) 2.339"OD X2.00" ID X115" Long c) Tolerance on all dimensions are as per Dwg D6017 d) Material: AISI 4130 (AMS 6371) Seamless tube Material certification required | | |
| 2.0 | D6017115P | Crosstube Material |
| | | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total : 66.0000 Each(s) Crosstube Material | | |
| 3.0 | PACKAGING 1 | PACKAGING RESOURCE #1 |
| | | |
| Comment: PACKAGING RESOURCE #1 Receive & Inspect For Transit Damage Ensure material certification is attached | | |
| 4.0 | QC6 | DIMENSIONAL CHECK |
| | | |
| Comment: DIMENSIONAL CHECK | | |
| 5.0 | PACKAGING 1 | PACKAGING RESOURCE #1 |
| | | |
| Comment: PACKAGING RESOURCE #1 Identify and Stock Location: <u> </u> | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA:  Date: 06/09/14
 QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Date: Friday, 6/9/2006 11:32:27 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE MATERIAL

Job Number: 27471

Part Number: D6017115

Job Number:



Seq. #: Machine Or Operation:

Description :

6.0 DC

DOCUMENT CONTROL



66

Comment: DOCUMENT CONTROL

Inspection Level 21

Sp 06/09/14

Job Completion



U 86/09/13

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
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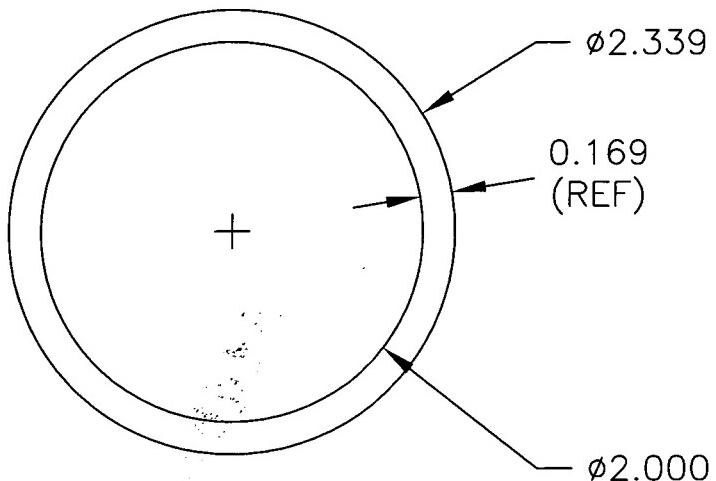
NOTE: Date & initial all entries

PRELIMINARY ISSUE

(P06.05.31)

| | | |
|---------|----------|---|
| DESIGN | DRAWN BY | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA |
| CHECKED | APPROVED | DRAWING NO. D6017 |
| DATE | 06.05.31 | TITLE CROSSTUBE MATERIAL |
| A | 06.05.31 | REV. A SHEET 1 OF 1 SCALE 1:1 NEW ISSUE |

SPECIFICATION CONTROL DRAWING



NOTES

1) D6017-XXX CROSSTUBE
 LENGTH

WHERE XXX IS LENGTH IN INCHES
 EG. 115" LONG TUBE: D6017-115

2) MATERIAL: AISI 4130 (AMS 6371) SEAMLESS STEEL TUBE

2.339 OD x 2.000 ID
 NORMALIZED & ANNEALED

3) TOLERANCES ARE PER ASTM A519 AS FOLLOWS:

O.D.: +0.007/-0.000

I.D.: +0.000/-0.007

LENGTH: XXX +0.188/-0.000

STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH

4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

TEST REPORT

MICHIGAN
seamless tube

SHIPMENT

7300 MICHIGAN SEAMLESS TUBE

SOUTH LYON, MICHIGAN 48178

001

| ORDER NUMBER | CUSTOMER ORDER NUMBER | DATE | OFC | COM | DI WI | NET SLS | GR SLS | ACCOUNT NUMBER | US | 1.DR | PAGE |
|--|-----------------------|----------|-----|-----|----------------------------|---|--------|----------------|-----------------------------------|------|------|
| 024561 | 061206JOE | 06/14/06 | 22 | 00 | 15 | 16 | 01 | 02598001FCO | | 1.DR | 1 |
| FACTORY STEEL & METAL SUPPLY 14020 OAKLAND DETROIT | MI | 48203 | | | S H I P T O | FACTORY STEEL & METAL SUPPLY 14020 OAKLAND AVENUE DETROIT | | | SN 2 TR 3 TNV 3 MI 48203 | | |
| | | | | | | | | | | | |

ROUTING

OPEN TOP/FULLY TARPED/FOB SOUTH LYON MI

PPD TRUCK

| ANALYSIS | SHAPE | PRODUCT | FC | ANNEAL | | REQUESTED |
|----------|-------|-------------------------------|------|----------------------------------|--|-----------|
| | | | | PER SPEC | | |
| 4130 | ROUND | COLD DRAWN | | | | 08/25/06 |
| SEAMLESS | | SPECIFICATION AMS6371/A519 | CMST | DESCRIPTION CD ALLOY AIRCRAFT | | 08/25/06 |

SPECIAL INSTRUCTIONS

80M PSI MIN YLD, AIM 90 PSI, CERT TO AMS19-96, MIL-T-6736BN NOTE-2

AMS-6360K W/DECARB LEVELS TO AMS-6371J, AMS-T-6736AN, 4130H&AMS-

2301J. PRODUCE FROM 1-HT. MARK TO INCL GRADE, AMS19-96, MIL-T-6736BN,

NOTE-2, AMS-T-6736AN, AMS-6371J, AMS6360K&4130H. MAT'L TO BE BOXED.

OIL OD SURFACE CRITICAL. CIRCUMFERENTIAL GRIND MARKS UNACCEPTABLE

| ITEM | QUANTITY | O.D. | I.D. | WALL | LENGTH | WT/FT | WEIGHT | |
|------|----------|-------|-------|------|--------|-------|--------|----------------------|
| | | 2.339 | 2.000 | | | 3.938 | | 13:23:04 08/25/06 |

| ITM | BALE | --BALE-- | ITEM | PART | | | |
|-----|------|----------|------|----------|--------|-----------|--------|
| NUM | NUM | PCS | FTG | HEAT NO. | LENGTH | STATUS | NUMBER |
| 1 | 1 | W | 66 | 633 | CUT | 9' 7.000" | COM |

D601715

| HEAT NO. | C | Mn | P | S | Si | Ni | Cr | Mo | Cu | Al | REMARKS |
|-----------|------|------|------|------|------|------|-------|----|------|------|---------|
| 00A062753 | .290 | .530 | .012 | .017 | .270 | .070 | 1.040 | .1 | .150 | .023 | EF SD1 |

| HEAT NO. | ULT. STR. PSI | YIELD, PSI | % ELONG 2" | HARDNESS | HYDRO TEST PSI | ULTRA SONIC % | EDDY CURRENT | EXPANSION |
|-----------|---------------|------------|------------|-------------|----------------|---------------|--------------|-----------|
| 00A062753 | 124,220 | 105,954 | 21.9 | BHN 241-248 | | | OK | |

DECARB OK GRAIN SIZE 7
 FREQ 0.01 SEV 0.01
 MACROS S1, R1, C2
 J1 J2 J3 J4 J5 J6 J7 J8 J9 J10
 50 50 48 44 40 35 34 32 31 29
 MELTED MANUFACTURED IN USA

We hereby certify that the reported data are correct
 according to Michigan Seamless Tube tests and
 those of its suppliers.